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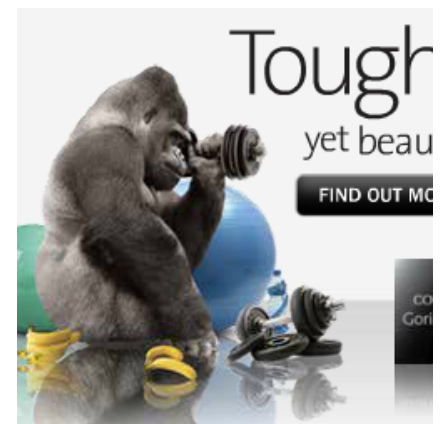
By John Horgan | December 17, 2011 | 41



What does it say about particle physics that the Higgs boson has generated so much hullabaloo lately? Physicists at the Large Hadron Collider in Switzerland have reportedly glimpsed “[tantalizing hints](#)” of the Higgs, which might confer mass to quarks, electrons and other building blocks of our world. Not actual “evidence,” mind you, but “hints” of evidence. “Physicists around the world have something to celebrate this Christmas,” the physicist Michio Kaku exults in *The Wall Street Journal*.



Actually, the Higgs has long been a mixed blessing for particle physics. In the early 1990s, when physicists were pleading—ultimately in vain—with Congress not to cancel the Superconducting Supercollider, which was sucking up tax dollars faster than a black hole, the Nobel laureate Leon Lederman christened the Higgs “the God particle.” This is scientific hype at its most outrageous. If the Higgs is the “God Particle,” what should we call an even more fundamental particle, like a string? The Godhead Particle? The Mother of God Particle?



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"Zombie" Fly Parasite Killing Honeybees

Lederman himself confessed that “[the Goddamn Particle](#)” might have been a better name for the Higgs, given how hard it had been to detect “and the expense it is causing.” A more fundamental problem is that discovering the Higgs would be a modest, even anti-climactic achievement, relative to the grand ambitions of theoretical physics. The Higgs would serve merely as the capstone of the Standard Model of particle physics, which describes the workings of electromagnetism and the strong and weak nuclear forces. The Standard Model, because it excludes gravity, is an incomplete account of reality; it is like a theory of human nature that excludes sex. Kaku concedes as much, calling the Standard Model “rather ugly” and “a theory that only a mother could love.”

Our best theory of gravity is still general relativity, which does not mesh mathematically with the quantum field theories that comprise the Standard Model. Over the past few decades, theorists have become increasingly obsessed with finding a unified theory, a “theory of everything” that wraps all of nature’s forces into one tidy package. Hearing all the hoopla about the Higgs, the public might understandably assume that it represents a crucial step toward a unified theory—and perhaps at least tentative confirmation of the existence of strings, branes, hyperspaces, multiverses and all the other fantastical eidolons that Kaku, Stephen Hawking, Brian Greene, Lisa Randall and other unification enthusiasts tout in their bestsellers.

But the Higgs doesn’t take us any closer to a unified theory than climbing a tree would take me to the Moon. As I’ve [pointed out previously](#), string theory, loop-space theory and other popular candidates for a unified theory postulate phenomena far too minuscule to be detected by any existing or even conceivable (except in a sci-fi way) experiment. Obtaining the kind of evidence of a string or loop that we have for, say, the top quark would require building an accelerator as big as the Milky Way.

Kaku asserts in *The Wall Street Journal* that finding the Higgs “is not enough. What is needed is a genuine theory of everything, which can simply and beautifully unify all the forces of the universe into a single coherent whole—a goal sought by Einstein for the last 30 years of his life.” He insists that we are at “the beginning, not the end of physics. The adventure continues.” Maybe. But I’m not hopeful. Whether or not physicists find the Goddamn Particle, the quest for unification, which has given physics its glitter over the past half century, looks increasingly like a dead end.

Almost 10 years ago, I put my money where my mouth is. The Long Now Foundation, a nonprofit that encourages long-term thinking, asked a bunch of people to make bets about trends in science, technology and other realms of culture. I bet [Kaku \\$1,000](#) that by the year 2020, “no one will have won a Nobel Prize for work on superstring theory, membrane theory or some other unified theory describing all the forces of nature.” (Lee “loop space” Smolin was my original counter-bettor but backed out at the last minute, the big chicken.)

Kaku and I each put up \$1,000 in advance, which the Long Now Foundation keeps in escrow. If civilization—or more importantly, the Long Now Foundation—still exists in 2020, it will give \$2,000 to a charity designated by me (the Nature Conservancy) or

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Kaku (National Peace Action). In defending my bet, I stated:

“The dream of a unified theory, which some evangelists call a ‘theory of everything,’ will never be entirely abandoned. But I predict that over the next twenty years, fewer smart young physicists will be attracted to an endeavor that has vanishingly little hope of an empirical payoff. Most physicists will come to accept that nature might not share our passion for unity. Physicists have already produced theories—Newtonian mechanics, quantum mechanics, general relativity, nonlinear dynamics—that work extraordinarily well in certain domains, and there is no reason why there should be a single theory that accounts for all the forces of nature. The quest for a unified theory will come to be seen not as a branch of science, which tells us about the real world, but as a kind of mathematical theology.”

I added, however—and this is both mawkish tripe and the truth—that “I would be delighted to lose this bet.”

Image courtesy Wikimedia Commons.

**About the Author:** Every week, John Horgan takes a puckish, provocative look at breaking science. A former staff writer at Scientific American, he is the author of four books, including *The End of Science* (Addison Wesley, 1996) and *The End of War* (McSweeney's Books, January 2012).

*The views expressed are those of the author and are not necessarily those of Scientific American.*

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3:41 pm 12/17/2011

No Worries...there is no Higgs!

3:43 pm 12/17/2011

The colider folks will keep stringing us along, maybe for another year or so – for more funding, until it's obvious that they have no results indicating this particle exists.

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6:01 pm 12/17/2011

But hasn't the "theory of everything" already been found? It's called God.

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6:05 pm 12/17/2011

I suspect it is not so much a matter of "unification" as "combination". We know a lot about the universe (or think we do), the key question is how do these components combine to produce the world we live in? – not what is the mysterious unifying thread, lurking in the background, that is "responsible" for these components in the first place. I think this is part of your argument in this article, and if I am right about that, then it is a good challenge for the "unification enthusiasts" to take up. Mind you, I do enjoy reading their books!

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8:48 pm 12/17/2011

this author is an inch deep and half a mile wide

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9:18 pm 12/17/2011

A great read. John Horgan did his best in the article. True Nature may not our 'passion for unity'. Man may get connected perhaps but not physical matter, at least for the present. Quest for a unified theory is indeed like a Mathematical theology, any way the concept of theology conceived by scientists leads to the belief God is there, after all what we cannot comprehend is indeed called God.  
Amen!

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10:18 pm 12/17/2011

"Image courtesy Wikimedia Commons."? I'm not sure I believe you.

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10:21 pm 12/17/2011

John Horgan: I support, your 2nd suggestion for the name of a more fundamental particle, "The Mother Of God Particle"! It has a nice ring to it.  
Richard Carlson

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11:22 pm 12/17/2011

Your article is wildly inaccurate.

IT IS well known in the science community the Higgs has been all but removed from the standard model. THE particle that is being looked at is no where near where the HIGGS would need to be.

The particle being looked at is much much lighter and doesnt answer any questions but infact would generate a multitude more questions if confirmed.

In summary this is NOT the Higgs, it is another particle.

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11:31 pm 12/17/2011

There is an alternative attempt at unifying general relativity, the standard model of particle physics and quantum mechanics without invoking unobservable particles/strings/branes, or unobservable extra dimensions, or ad hoc "WIMPs", or any other Ptolemaic epicycles.

It is called Discrete Scale Relativity and it bears no relation to string/brane theory, supersymmetry, or other fashionable theories that are virtually untestable either because they cannot make predictions at all, or because they predict so many possibilities that scientific testing is short-circuited.

DSR makes at least 10-15 definitive predictions.

It predicted pulsar-planets before they were discovered.

It predicted trillions of unbound planetary-mass objects before Sumi et al discovered them this year.

It predicts exactly what the dark matter is (stellar- and planetary-mass black holes), and this is the critical test of the new paradigm. It will be resolved one way or the other soon.

I do not want to see you lose your bet, but there is a new and serious scientific contender on the scene. It shows some real

promise for unification for the first time in about 80 years.

It is worth a long, careful look.

RLO

<http://www3.amherst.edu/~rloldershaw>

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3:27 am 12/18/2011

Thank you John Horgan! You have no idea how refreshing it is to here an honest analysis like yours through all the media hype. It brings back memories.

Some 34 years ago, Prof. Stephan Berko of Brandeis University introduced our Quantum Mechanics course with the following question: "Why do we know that there is a law of conservation of energy (or more generally mass)." After patiently listening to my class's answers, he responded that they were all wrong. "We do not know logically that there is such a law, rather we perceive the same pattern repeatedly, so we assume such a law." I found it a seminal insight.

The "theory of everything" or TOE remains a myth even as the ever-growing plethora of multidimensional string models and the divine Higg's particle, vie for this holy grail. Even where predicting aspects of perceived reality beyond those upon which it was predicated, a TOE certainly doesn't account for itself. It is claimed that the "ultimately" refined "true" TOE will be shown to require itself. A physical object turned in a complete circle will come back into itself, a cleverly constructed circular logic would do the same for a TOE. It would be worse than meaningless, however, as now that circular logic created would need explanation by the TOE. Further, the notion that translating perception into theorem creates any new information at all, much less complete knowledge, is plain wrong. [Even in pure mathematics! – see Gregory Chaitin's "Omega and why maths has no TOEs," at: <http://plus.maths.org/issue37/features/omega/>

No theory could deal with "Everything" unless it contained it, and only Infinity itself can do this. Why Infinity? — Because anything contained in "Everything", has a definition. This means a specified finiteness — a boundary between that which it is, and that which it is not (everything else — or in the case of "Everything" itself, anything but the All). Infinity, on the other hand, has no definition, no boundaries, no rules, and so no

exclusions. There can be no laws of chance, no laws of causality, but therefore, certainly no TOE.

The mythology of a TOE, from the Greek atom to the Higg's particle and strings, would be a harmless religion save for the tax dollars that tools, technicians, and researchers cost. However the mentality behind them is a stumbling block that may well threaten the survival of humanity. Almost a century ago, Betram Russell began to sound the alarm concern the limits of our sensory apparatus (and brains) on scientific progress. Like the story of fisherman with two-inch separation between knots in their nets who were convinced the no fish existed shorter than two inches because they never caught one, from Aristotle to even the greatest of modern scientist, their is still the notion that what man can't sense or grasp doesn't exist. A practical model to be sure — but Stephen Hawkings honestly put it — “Reality? I don't know what reality is, I only know what I measure.” The computer can seek symmetries in problem statements or data to simplify them as much as possible — but if the information is over about 3 GBITs, we cannot fit it in even an otherwise empty brain — it is impossible to grasp, to perceive! And all the internet collaboration in the world won't help.

It is a breakthrough here that has become critical to our survival, because to heck with the “goddamn” Higgs particle! We are being overwhelmed by economic, socio-political, and ecological/climatic/resources problems in our globalizing world. And who knows what categories of problem interaction that we do not even perceive yet in our TOEP — “Theory of Every Problem.” Cross-coupling on all dimensions of these categories is tightening, muti-tier, with growing importance of nolinear components. This means tsunamis of chaotic, destructive deviations of increasing magnitude, frequency, and duration. We have reached Einstein's nightmare — that our minds would conceive technological changes to our environment with problems and order of magnitude beyond the capability of those minds to solve.

We must somehow evolve ourselves past this if we are to survive the present era. Somehow to come together in a mutual concern and guarantee (for no one's fate — national, communal, or even individual, is really completely independent of anyone else's anymore). We see in nature the powerful new sense of being in the balance of self-preservation and altruism in nature — the perceptual, strategic, and tactical genius of flocks, herds, schools, and swarms. Recent research on bacterial social networking in the formation and function of megacologies working with a hundred times the global human population act with tactile sense and intelligence vastly beyond

what their individuals are capable of. And to the more fundamental — almost metaphysical: the amazing properties of Bose-Einstein condensates, and the capabilities of quantum computing over the classical Von Neumann.

Somehow, if we all come together — something that scientists should rightly lead in — Humanity might stand a chance of self-evolving its way out of our present difficulties. And then again, if we became such a “homo globalis,” imagine what we might perceive and grasp beyond Higgs bosons and strings — out into the infinite vista beyond our fishing net.

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**6:50 am 12/18/2011**

Hey, if they need more money after this, the Father of the Mother of God particle, is a little bit further out of reach...

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**7:13 am 12/18/2011**

I'm throwing my lot in with my old friend, Dr. McGucken and his Theory of Moving Dimensions:  
<http://www.physicsforums.com/showthread.php?t=8739>

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**8:07 am 12/18/2011**

Most Physicists, at least not those trying to sell a book using sensationalism, don't like the name given by the media to the Higgs Boson. The reasons for this dislike are generally based upon rational logic. They are also influenced by concern for actions resulting from the widespread and enormous ignorance in our society. Around 40% of our population don't even believe in the evolution of life through natural selection and mutation, despite overwhelming evidence to the contrary. Some of these worthies even think that the earth is less than 10,000 years old! Can you imagine what they'd do to a goddamn witch who, after discovering the existence of that goddamn particle, managed to replicate the big-bang, or a smaller version, at his/her coven!

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**10:15 am 12/18/2011**

Does the always (tediously) recurring question of “does the [...] portend the end of physics” portend the end of physics?

Of course not, it is always (tediously) recurring.



And ... the media scatterbrain Kaku? Please!

Even if a standard Higgs, not a done deal yet, would be an observation, there are large sectors of physics still at large: neutrino masses, gravitation (suggested), dark matter, dark energy. In fact, we only know some ~ 4 % of the universe content.

That said, the description of “mathematical theology” seems rather apt as regards the idea of a TOE, a unique unified theory.

However, string theory is not among those as of yet. This is rather seen as its problem, how do you constrain it to be unique?

And the description of such theories as that they “postulate phenomena far too minuscule to be detected by any existing or even conceivable (except in a sci-fi way) experiment” is observationally wrong.

String theory predicted the “flux tubes” of QCD before the latter did it more simply and it predicted the black hole entropy after semiclassical models did it more simply. And string theory makes predictions on the Planck scales that have now started to be probed by such phenomena as photon timing and polarization from supernovas. (SN1984 observations.) Hardly phenomena on scales “too minuscule to be detected”.

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10:29 am 12/18/2011

Interestingly in the context, if it is a standard Higgs that is observed @ 125 GeV, it may indeed challenge unified theories. Such a standard Higgs is marginally stable. [[http://arxiv.org/PS\\_cache/arxiv/pdf/1112/1112.3022v1.pdf](http://arxiv.org/PS_cache/arxiv/pdf/1112/1112.3022v1.pdf)]

Potentially a meta-stable Higgs have “a lifetime much longer than the age of the Universe.” So now we may know how the universe ends: not by matter decaying (GUTs; rejected by observations), not by spacetime decaying (“Big Rip”; rejected by the standard cosmology), but by the vacuum decaying.

And then an already highly finetuned Standard Model would have another unnatural value to explain, why the Higgs is marginally stable to result in the observable universe. TOEs seems less and less likely, while anthropic selection seems set not only to explain the finetuned value of vacuum energy (in the form of dark energy cosmological constant) but also the finetuned value of its lifetime.

@ m:

The article is accurate in that a standard Higgs @ 125 +/- 1 GeV is (perhaps marginally) quite possible, see my reference above. It is also the simplest theory for such a Higgs.

I don't know how you could have missed that, all press releases I have seen mentioning it agrees on physicists entertaining the standard Higgs as one of the possibilities.

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12:06 pm 12/18/2011

Man what a pessimist. I do think there is a TOE. As for sucking up billions of dollars over the decades to find very little. I contend that 1. Without fundamental research we will not drive the engine of economic development. Increases in productivity ultimately come from new technology and new technology comes from fundamental research. If we do not fund it at the national and international level from our governments it would have to come from corporations and corporations do not fund research without a chance to make a profit. Since fundamental research does not bring a profit it will not be funded and goodbye innovation and productivity.

Second, the pace of discovery has outpaced that of growth and development. At the beginning of the 20th century ground breaking physics was done on a tabletop by one person, as the progress of discovery went on it went from one person to small groups of scientists, to universities, national and finally international consortiums of thousands of scientists. We have researched the point where we cannot organize an even bigger level of people and funding. Therefore fundamental research in physics from here on out will progress at the rate of economic growth of the world and discovery will grow at the same pace, not at the lightning pace of the last century. It does not surprise me from this point of view that no breakthroughs in experimental research in the last decade or two have been very sparse. So a lot more patience is due to find something

new.

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1:44 pm 12/18/2011

“There may be no such thing as the “glittering central mechanism of the universe” to be seen behind the glass wall at the end of the trail. Not machinery but magic may be the better description of the treasure that is waiting.”  
—John Wheeler, American theoretical physicist  
Faithstirrednotshaken.com

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6:31 pm 12/18/2011

“How can physics live up to its true greatness except by a new revolution in outlook which dwarfs all its past revolutions? And when it comes, will we not say to each other, ‘Oh, how beautiful and simple it all is! How could we ever have missed it for so long!’.”

John Archibald Wheeler, 2000  
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Amen,

The new fundamental symmetry is global discrete cosmological self-similarity, which yields an infinite discrete fractal cosmos.

RLO  
Discrete Scale Relativity

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7:58 pm 12/18/2011

@engineer.sci

“..... from Aristotle to even the greatest of modern scientist, their is still the notion that what man can't sense or grasp doesn't exist.”

Secularism is allergic to the notion of a creator-God, since its implicit world-view has ethical implications concerning limits on our sexual behaviour – at least within the mainstream religions.

On the other hand, they seem to feel great excitement at the notion of the fabled 'promissory note', that one day science would explain everything. Even Einstein, not a pantheist, but a fervent panentheist, on a rare 'off-day' seemed to espouse this notion.

So, rather like Wall Street's finest, the militants of secular science are, when it comes down to it, driven by forms of fear and greed, a vicious, self-reinforcing circle.

Only such gross and rudimentary behavioural impulses could have created this weird cultural inability to accept that paradoxes are not 'counter-intuitive', but 'counter-rational'. They are only oxymorons that happen to be true.

What does it tell us about our hegemonic, secular, scientific zeitgeist that its leading proponents, generally possessed of an egregiously high worldly intelligence, nevertheless, routinely refer to a particular concept as 'counter-intuitive', when it is clearly 'counter-rational'. (Of course, in some cases, 'counter-intuitiveness' is the 'mot juste'.

This, in turn prompts the question, what degree of imbecility would be required for a person to publicly state that he found an oxymoron, 'counter-intuitive'? How blunted and minimal would his intuition have to be, for him to find that merely his intuition was challenged by an oxymoron. "I've got an awful suspicion that you can't square a circle..."

This increasing proliferation of paradoxes at the cutting edge of physics at both extremes means that science possesses absolutely no advantage over the Christian religion or the other mainstream religions, as regards the basic, absolutely imponderable mysteries of their respective faiths. All this was clearly sensed by Einstein (most of the time), Planck, Bohr and Godel. And they would have laughed at the notion that 'evamolution' had anything to do with the teleology of matter; a convenient obfuscation, conflating a repudiation of 'young earth' creationism with a repudiation of the Judaeo-Christian faith.

I don't think Einstein stated that the paradoxes of quantum physics he could not accept were 'counter-intuitive'; he knew, as any child would, that they are counter-rational. Though, of course, he understood that that did not, ipso facto, render

them untrue.

Such an acknowledgement would also be anathema to the large corporations; 'the thin end of the wedge'. Next, people would be questioning the morality of the corporations' 'sacred' quest for knowledge and untrammelled pursuit of inevitable, technological progress – on mankind's behalf, of course.

Such an acknowledgement would also, of course, be a major disappointment to militant, secular fundamentalists such as Richard Dawkins and the countless, rebellious teenagers who seem to constitute a goodly proportion of his base.

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8:47 pm 12/18/2011

I have to confess that I find your conclusion patently ridiculous. No doubt, had you been alive then, you would have claimed that electricity couldn't be unified with magnetism, and that the strong and weak forces couldn't be unified with the electromagnetic force.

Those who believe that merely because they don't know something it can't be known end up as history's laughingstocks. Of course there's a unified theory – if there weren't, the universe wouldn't be. It's merely yet to be found. Or, perhaps, it has been found, and is not yet understood.

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8:50 pm 12/18/2011

"This increasing proliferation of paradoxes at the cutting edge of physics at both extremes means that science possesses absolutely no advantage over the Christian religion or the other mainstream religions, as regards the basic, absolutely imponderable mysteries of their respective faiths."

You have got to be kidding. Right?

Oh well, excuse me, I have to go pray that this message gets posted. Wouldn't want to trust it to those paradoxical, hegemonic laws of physics, now, would I.

11:21 pm 12/18/2011

I wonder why you loose sight of charity by conditioning the gift on the outcome of the bet.. If you have charity, and the money, you should both make the donations now, and not hold the charity to the outcome and delay for the sake of being right. If it doesn't matter ( and it doesn't) show your charity.

So, why does a particle/force that confers mass to a proton ( or two colliding) have a mass of 125 protons?

Doesn't the conservation of information described by Susskind imply a finite universe?

Doesn't space have a place in the equations? If spacetime is curved by gravity (mass) wouldn't spacetime have a reciprocal effect on mass?

And , would black hole formation curvature of spacetime drive the expansions of spacetime seen in the Hubble effect?

Wouldn't space be one of the symmetries, and part of a mass/energy/spacetime equivalency?

If the universe is information wouldn't it begin with ?, the symmetry breaking of certainty, and isn't the uncertainty principle the fundamental unit and cause of the symmetry breaking and the Big Bang?

Are there neutrino black holes?

Besides the faith that fundamental physics discoveries will lead to innovation, economic development and advances of the human race including rank and file muggles and such, what specific benefits are supposed to flow from the Higgs confirmation?

We have a lot from Einstein's theory, math and experimental confirmations, and quantum mechanics. Unification ( not a Higgs thing) seems overrated.

I think we were doing more for less with paper and pen

(Einstein) and the simpler experimental confirmation of gravitational lensing.

If we could turn neutrinos into electrons....

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12:15 am 12/19/2011

@Torbjörn Larsson

😬 We all know that science will move the standard model to accept the new particle in it, its how science works. But at this point in time you said it, this particle is so on the outskirts of where it was predicted to be, its likelihood of it being the Higgs we were searching for is almost if not exactly zero.

That said we can call it the higgs or whatever we like, bend the model to fit it and bang it was exactly the particle we were looking for. Hindsight is great.

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12:26 am 12/19/2011

@josh358, science is understanding, faith is unknowing. The religion you quote pioneered some very good scientific principles including proving some evolutionary principles with genes. What you didnt know christianity provided some evolutionary proofs? Oh dear, perhaps if you pray more, god will tell you these things. THE rest of us can just read about it in books. Oh right another thing religious people pioneered first. Hmmm what other scientific things did religious institutes provide us.

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12:30 am 12/19/2011

I believe in the Higgs. However, this is not of course proof. Although it is difficult to have a firm grasp on Quantum Mechanics, and proof of its principals is yet to be gained through experimentation, mathematically it makes sense. The father of science Sr Isac Newton once said "It is as if I am on a beach, looking for the perfect seashell and in front of me is an ocean of truth". We have yet to discover the whole if Newtons ocean. I believe we have taken our first step into it. It seems to me the More we Learn about the Universe the more we realize we have much more to learn. Knowledge leads to more Questions and deeper understanding leads to a further desire to know everything, we may never achieve this, but the journey , to me is worth the sacrifices of our endeavors. It will be a long

time, in my opinion before we can find a way to prove this theory through the scientific method, it is to me a philosophy ,rather than a theory at this point. but a philosophy that I believe in. It is , if you think of it in these terms, as if the universe is entirely surrounded and made of the harmony's of these strings. The Harmony of the universe. Greene named his book well it is quite elegant.

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7:58 am 12/19/2011

Well said.

We forget sometimes that while certain individuals doing their own research do get a sample of “knowledge”, the rest of us have a “knowledge” that is little more than belief in what they then tell us they “know”.

Thus, trust is the real god particle it would seem.

<http://powertoxins.blogspot.com/2011/12/pillars-of-knowledge-faith-and-trust.html>

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12:06 pm 12/19/2011

The more fundamental particle: the Hitchens! 😊

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1:21 pm 12/19/2011

Searching for the god particle? Perhaps they have forgotten that Einstein equated matter with energy. The god particle is love energy, only attainable thru a zen no-mind, not a mind that theorizes. Love is the mystic answer. But answers are elusive, particularly (pun intended) when you don't ask the right question. So, what is the right question that love is the answer to? The question is who am I? I am love, you are love, we are love. 2b-One.com

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3:07 pm 12/19/2011

@denys: the term “unification” is appropriate in that it is currently believed that at the extremely high energies present immediately after the Big Bang all four of the known forces were in fact a single force, and each of the forces then “precipitated out” so to speak as the temperature fell. One of



the lines of evidence suggesting this is the coupling constants for the various forces, which give the strength of the interaction, are very different at low energies (i.e., at the energies we live at) but as the energy goes up eventually the coupling constants appear to head toward a single common value.

By analogy, electromagnetism was a true unification of the electric and magnetic forces, not just a combination, because in fact they are different aspects of one and the same force. A similar argument can be made for the electroweak unification and the Standard Model, which unifies the electroweak and strong forces.

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7:26 pm 12/19/2011

Why does mathematics in cosmology have to lead in the search for a theory of everything ?

It seems to me this is akin to taking the symbols in existing equations, and by rearranging them expect to find new truths.— Can happen, but when and how often?

Einstein and Hawking claimed to work from mind pictures and not from mathematical equations. So where are the pictures to lead a new charge?

Let me introduce a possible new picture — .

Suppose the “universe is a disturbed field of pure energy seeking equilibrium”, and follow its logical conclusions through gravity, black holes, dark matter, dark energy, and so on.

Seems like a tall order and yet it fits better than the mind bending ‘branes and strings, and even touches on portions of relativity, quantum mechanics, and includes a suggestion of how religion and science can blend.

The concept is explained in detail under the title “The Dynamic Ether” and is pending a CD distribution by Kunaki, the print-to-order publisher.

A limited number of promotional e-Books is available free of charge.

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7:53 pm 12/19/2011

“Of course there’s a unified theory — if there weren’t, the universe wouldn’t be.”

Yes, josh, it’s called, God: Einstein’s ‘Illimitable, superior spirit’.

I thought you secular fundamentalists were supposed to be super-rational. How is it you can't see that the whole universe is designed with unimaginable sophistication. As Einstein put it on one occasion:

“The human mind is not capable of grasping the Universe. We are like a little child entering a huge library. The walls are covered to the ceilings with books in many different tongues. The child knows that someone must have written these books. It does not know who or how. It does not understand the languages in which they are written. But the child notes a definite plan in the arrangement of the books—a mysterious order which it does not comprehend, but only dimly suspects.”

But we don't need to imagine it, we just open our eyes and we can't miss it; it's all around us. On the other hand, I suppose there's just a teeny possibility that you really are smarter than Einstein. The problem is that 'design' predicates a designer, and God would just spoil the party, the self-referential, mutual admiration society of what Einstein called, “naive realists.”

Indeed, the word, 'design' predicates both an intelligence and a purpose, so you will all have to come up with a new term which denotes a design, but which is arbitrary, gratuitous and not created out of nothing and not created out of anything; but there! Fully functional... but by accident; entirely aleatory, and not reflecting any kind of intelligence.

That shouldn't be too difficult, should it? After all its usage, not learned academies that make our language. You should all get your heads together and come up with such a term.

But then it's much easier to conflate it with Christian fundamentalism, isn't it? Only trouble is, they have a 'cast-iron' fifty percent chance of being right, and you have zero chance of their having absolutely no chance of being right.

As Max Planck, a far brighter physicist, I suspect than any scientific hero you would idolise, pointed out, because a 'law' of nature obtains at a particular time, there is no ground for holding it to be inevitable that it must continue to exist or operate.

On the other hand, Christians believe that “God scatters the proud in the imagination of their hearts”, and he has quite a black sense of humour in their regard. So, I find it entirely plausible that He would provide atheists with a plausible scenario to believe nonsense, and would then vindicate even the most literal-minded of his children. Why not?

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8:00 pm 12/19/2011

When you can suggest to me an alternative to an omniscient, omnipotent, personal God, as the agency whereby light always follows an observer, whether at rest or moving at a constant speed in the same direction, at its absolute speed, I would be very interested to hear it.

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11:07 pm 12/19/2011

To me it seems fairly self-evident that the cosmos is a seamlessly unified whole.

Nature cannot have Balkanized sets of laws that are different on different Scales, such as the Stellar, Atomic and Galactic Scales.

Such a schizophrenic amalgam of mutually contradictory laws would produce a degree of disorganization that is hard for us to imagine.

No, there must be one set of laws that govern all of nature in a uniform and unified way, albeit operating on different space-time-mass scales.

Physics has yet to achieve a comprehensive understanding of these universal laws and principles, but the simple combination of General Relativity, Electromagnetism, Quantized Mass/Angular Momentum and Discrete Scale Relativity takes us a substantial distance towards that goal, and the path forward is no longer in doubt.

One simple change in the assumed [but never tested] scaling for gravitation and we find ourselves in a new and much more unified world. I claim that it is the real world of nature. This new vision was referred to by Carl Sagan as the most exquisite idea in science or religion that he had ever heard of.

RLO

<http://www3.amherst.edu/~rloldershaw>

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4:28 pm 12/22/2011

pbecke (#32): You fundamentalists are so adorable when you grasp at straws!

First, using Einstein — a Spinozan agnostic at best — to support your arguments is disingenuous. Second, it wouldn't matter even if Einstein was a Pentecostalist preacher; what matters is the evidence, not the person. Unfortunately for apologists like yourself, there is no evidence for an Abrahamic god or any of the other 4,000 gods that humans have invented. Third, the argument "Since we don't know everything, then my personal god is real" is both a tired cliché and a logical non-sequiter.

Religious belief is a kind of primitive scientific theory — a theory that has been proven false time and time again. Clinging to humanity's ancient myths is so provincial and simplistic and convenient! These myths may have served a purpose at one time, during the pre-scientific childhood of our species, when stories of magical beings provided comfort. But in 2011, there is just no argument.

But hey, it's a free country, so you can believe in Santa Claus for all I care. Just don't expect to find any actual evidence for him (anecdotes, personal experience, and ancient texts are not evidence, by the way). Of course, that has never and will never stop people like you....

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4:44 pm 12/22/2011

The use of all the epithets and such applied to the Higgs was never invoked by Higgs, so get off this ridiculous attempt to discredit the man the theory and the attempts to prove or disprove the idea. Fundamentalists such as Horgan with a superior smile seek to discredit all scientific investigations, even though they make full use of all scientific discoveries such as the internet and computers. Why don't they find a cave somewhere and live off the Lord's bounty free of all foolish unholy science.

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5:50 pm 12/22/2011

Horgan is clearly smart enough to write this piece without a swipe at religion, but he prefers to choose the holy day season to offend as many as he can of the umptillion Christians, Jews, Muslims and Hindus on earth. Apparently he prefers the company of Hitchen's ghost over that of Martin Rees and other scientists who prefer not to alienate religionists.

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10:48 pm 12/22/2011

Why have you dropped "Boson" from the name of the particle? In your earlier article (<http://links.email.scientificamerican.com/ctt?kn=70&ms=Mzc3OTg4MTcS1&r=NTM5ODMzNTM4NAS2&b=o&j=MTIzMjUyMjQ3So&mt=1&rt=0>) the title said "Higgs Particle", but in most of the text the correct, full name was used. In the current article, Boson is completely omitted. Is this an attempt to deny credit to Bose?

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11:08 pm 12/24/2011

Read Dr. Michio Kaku's Rebuttal to this Cross-Check blog entry @ <http://bigthink.com/ideas/41681>

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11:28 pm 12/24/2011

I don't want to hijack this thread, but I was curious if Mr. Horgan regrets designating the Nature Conservancy as the beneficiary if he wins the bet? Particularly in light of TNC's ties to BP and allegations that it engages in "greenwashing"?

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1:14 am 12/25/2011

[Part One](#) of Wallace Thornhill's lecture

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